

REMARKS

Obviousness Rejections

On page 3 of the Office Action, claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. (JP 8-165542, thereafter JP' 542, based on English translation) in view of Jean et al. (US 5,714,116, thereafter US '116) and Bobbert et al. (US 5,458,704, thereafter US '704). On page 7 of the Office Action, claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '542 in view of US '116 and US '704, and further in view of Lars-Ake et al (US 6,048,491, thereafter US '491).

Applicant respectfully submits that the present invention is not obvious over the cited art, and requests that the Examiner reconsider and withdraw this rejection in view of the following remarks.

Regarding the differences between the steel of the present invention and the steel which is described in JP 8-165542, Applicant submits that:

in the present invention, Si has to be less than 0.15%, in order to improve the thermal conductivity;

in JP 8 165 542, the composition is adjusted in order to have Si content higher than 0.25%, and the lower limit is 0.2%;

in the present invention, boron is necessary;

in JP 8 165 542 boron is considered as harmful;

in the present invention, hardness has to be between 430HB and 530HB, at all points;

in JP 8 165 542, the hardness is less than 460HB by the side of the base material of a weld junction.

Regarding US 5,714,116, Applicant submits that this document describes an abrasion resistant steel, not a steel for moulds. Moreover, the chemical composition of the steel which is described in this document has to be such that $\text{Si} + \text{Al} \geq 0.6\%$ and $\text{Al} \leq 0.2\%$. It results from these conditions that Si has to be greater than 0.4%. This is not compatible with the limit of 0.15% for Si according to the present invention.

Regarding US 5,454,704, Applicant submit that this document is related to a steel for armor, which is very different from a steel for moulds. In this document, there is no reason to limit the silicon content.

As there is a significant difference between the steel according the present invention and the steel described in JP 8 165 542, and as the steels described in US 5,714,116 and US 5,454,704 are not steels for moulds and have significant differences with the steel of the present invention, Applicant submits that it is not possible to see how it could be obvious for those skilled in the art to combine the cited documents in order to obtain the steel according to the present invention. Further, it is submitted that US '491 does not make up for all the deficiencies of JP '542, US '116, and US '704, so the present invention is not obvious over all the cited art.

Thus, Applicants submit that the present invention is not obvious, and withdrawal of these rejections is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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